Energy Trade in Europe:
Competition and Regulation in View of the EU Enlargement

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Abstract

The paper analyses the current state of liberalisation and regulation of the energy sector in Europe. It examines the challenges emerging from gradual liberalisation of the EU energy market and the relationship between competition and regulation. On the basis of experience gained so far, main winners and losers from the liberalisation process are identified.

Further, the paper examines specific features related to the process of integration towards the EU. Generally, in the process of integration towards the EU, it is necessary to develop functioning market economy and capacity to cope with competitive pressure and market forces within the Union. In addition, the candidates have to accept the entire *acquis,* including competition policy and the EU criteria for state aid allocation. Since the EU energy market is being liberalised, the alignment process is quite complicated - candidates have to gradually liberalise market, while keeping it regulated in order to ensure public service.

Finally, the paper examines whether and how the energy trade in Europe will be changed after the EU enlargement, and to what extent these effects can be regarded as trade creation and trade diversion.

1. Introduction

Trade is an economic activity. Energy trade requires political commitment. That indicates that energy sector is somehow specific.

Indeed, energy sector is strategic one. It is relevant for state security and engages environmental issues. It is at the core of economic activities and therefore considered to be a key factor for Europe's competitiveness and economic development.

On the one hand, strategic importance of the sector, questions of sovereignty and control over natural resources, particularly as this impacts the security of supply, as well as "natural" monopolistic structure of network industries have impeded implementation of market – mechanisms in the energy sector as well as international trade. The sector has been protected, suffered from state interventions and price distortions that gave to the consumers misleading signals. On the other hand, energy it is the sector that has an international character either by virtue of participants or by the location of the resources being exploited. International energy co-operation is necessity, since it is the only way to tackle environmental problems, ensure political stability and growth of the world markets. No country has been able to

achieve, or can logically expect to achieve, energy self- sufficiency in isolation from world markets. Therefore, there is necessity for energy trade. In order to enable trade, the potentially competitive part sector has to be liberalised for which transparent, non-discriminatory and enforceable trade rules are required. If competition is to be introduced, the “monopolistic” part has to be regulated.

2. Liberalisation of the EU energy sector

2.1. Institutional framework

The integration process, which led to the formation of the European Union, had begun in the energy sector. Institutions aimed at co-operation in the energy sector have developed into institutions aimed at integration of Europe. The outcome is surprising: the dividing barriers were eliminated almost everywhere but in energy, leaving the sector outside the mainstream developments of the Community, i.e. creation of the single market.

The European Commission proposed creation of an internal market for electricity and gas in the second half of 1980s, with view of creation of a single energy market.

Establishment of the single energy market became a part of the energy policy, and one of its priorities. The creation of the single energy market has gradually proceeded. In the first phase, which begun in 1990-s measures were taken to ensure the transparency of prices to final consumers and to facilitate the transit of gas and electricity between the Community’s major grids. In the second phase, starting in 1993, production and transportation opened to new entrants on non-discriminatory basis, by introducing non-discriminatory licensing system. Vertically integrated electricity undertakings unbundled, and the concept of third party access was introduced on limited basis.

In the third phase, launched in 1996, the gradual opening of the markets (for electricity, and later for gas) was required. Common rules that enabled free movement within the Community were adopted. In electricity third party access became responsibility of the network operators. Further, the Electricity Directive (Directive 96/02/EC), Article 19, layed down minimum market opening. In the fist phase, from February 1999 a minimum market opening of 27% had to be realised. From February 2000 this minimum percentage was increased to 30%, and in February 2003 market opening has to reach a minimum of 35%. These minimum percentages are calculated according to the average consumption in the EU of electricity consumed by final consumers of over 40 GWh (step 1) of over 20GWH (step 2) and more than 9 GWh in the final step (step 3) provided by the Directive. By 2006 further market opening should be discussed. The Gas Directive (Directive 98/30/EC) required opening of the market equal to at least 20% of total annual gas consumption of the national gas market in 2000. This percentage shall increase to 28% in five years, and to 33% thereof 20 years after the entry into force of the Directive.

The Lisbon European Council (23-24 March 2000) called for the faster and complete opening of energy markets. Therefore in March 2001 the Commission proposed a set of new measures to open up the gas and electricity markets fully by 2005. The proposal concern the degree of market opening (“quantitative proposals”) and the minimum obligations regarding access to the network, consumer protection, regulation and unbundling of the transmission and distribution function in integrated gas and electricity companies (“qualitative proposals”).

In addition to the liberalisation of national energy and gas market, the proposal included setting up the

conditions for access to the network for cross-border trade in electricity. The proposal included measures aimed at reinforcing the conditions which encourage real and fair competition, and introducing a genuine single market. Such integrated market should be able to avoid type of problems the US faced in California. The liberalisation and regulation should, in other words, "contribute to security of supply, quality, consumer protection, environment, while at the same time they should bring real benefits in terms of competition, price and competitiveness" (Palacio, 2001.). The proposal was amended in June 2002, and the text should be adopted in the course of 2002.

2.2. Implementation

The establishment of the internal energy market can be evaluated on the basis of the "institutional" and "functional" performance of the EU member states. Institutional criterion for the establishment of the internal energy market is compliance with the EU *acquis,* i.e. implementation of directives. The functional indicator concerns the development of market as such and the impact of market opening on related important policy fields, such as public service objectives, environment and security of supply.

The key "institutional" requirement imposed by the electricity and gas directives is degree of opening of the market.

In electricity sector, all the member states have chosen to open up a larger share of their markets. Four member states, Finland, Germany, Sweden and the UK have already completely opened their market, whereas another six member states, Austria, Belgium, Denmark, Ireland, Netherlands and Spain will move by 2005 to full market opening.

The implementation of gas directive is less successful. Three member states, Germany, France and Luxembourg, have still not implemented the directive into national legislation. Further, for Greece and Portugal minimum opening of 33% is assumed for 2008 and "later". Finland, too, has certain derogations in place. Still, on average (on weighted volume basis) approx. 66% of the electricity market and 79% of the total EU gas demand was in principle opened in 2000.

However, formal market opening is not sufficient guarantee of choice, i.e. competition.

The current degree of market opening provides only an indication of the real degree of competition. Namely, being an eligible customer does not necessarily guarantee real choice of supplier. For instance, if supply side competition is to be introduced, investments are required. The transparent and non-discriminatory rules applicable for new investment are therefore necessary for creation of competition. In addition, even if these investments take place, a high level of market power of existing generation companies may impose barriers to new entrants (e.g. with high imbalance charges). Other issues that are necessary for competition to be real include non-discriminatory access to the network and effective dispute settlement mechanisms. Still, formally non-discriminatory, but excessively high network tariffs discourage third party access and may provide revenue for cross subsidy. Similarly, network tariff structures that are not published in advance may lead to uncertainty and create costly and time-consuming disputes. This can be avoided in full ownership unbundling takes place. Further, since reciprocity principle is allowed, the "protective" behaviour of one member state can impede market development in neighbouring states.

The measure of the competition I use for the purpose of this paper is the level of customer choice and

ultimately price levels. Two reports (Eurostat, 2000a, Eurostat, 2000b) show a general downward trend in electricity price levels across the EU. The highest share of consumer switched the supplier in the UK and Sweden (European Commission, 2001,b). The UK and Sweden are also among the countries in which the prices dropped significantly. On the other hand, in Greece and Spain, i.e. in countries in which consumers did not (Greece) or switched a supplier to very limited extent (less than 5% in Spain) the prices increased. Greece also failed to implement directives successfully.

The Commission's Report shows a strong correlation between implementation of directives and the level of customer choice and price levels. The shortcomings in the implementation of directives can be classified as follows: insufficient regulator power, inadequate unbundling, high network tariffs, balancing regime, dominant incumbent and cross border issues (European Commission, 2001,b). Namely, the member states which have adopted policies along the lines of the Commission's proposals have experienced better performance of the electricity market in terms of customers exercising the right to choose, and reduced prices.

The further liberalisation of the market requires additional measures that ensure effective implementation. These include establishment of regulatory structures, and (in case of electricity) a tariff system for cross-border transactions.

3. Competition and Regulation - Friends or Foes?

Liberalisation of the energy markets is limited by public service obligations. Competition is limited by degree of liberalisation and the fact that in the supply chain there are activities that are considered as *naturally* monopolistic (transmission and distribution network level).

The EU member states can define public service obligations in the general economic interest within five categories, related to environmental considerations, security, regularity, quality of supply constraint, and pricing policy considerations. In electricity and gas sector, there is a common set of provisions that regulate activities of companies under the public service obligation. These provisions can be listed in three broad categories. The first is related to universal service, the second concerns the protection of environment, and the third relates to security of supply considerations.

The concept of universal service contains the right to be connected to a grid, the right to be supplied, the right to be supplied with high quality service, the right to be supplied with high quality service at affordable prices, and the right to receive high standards of customer service.

The monopoly network operator has the obligation to provide universal service. The opening up of the market is not immediately linked to this obligation.

The obligation to connect customers (i.e. to guarantee the right to be supplied) is the corollary of the monopoly situation (in the case of captive customers). The competition (supply for eligible customers) is viewed as the mean of achieving the obligation to connect customers, and to help meeting the obligation to supply customers with high quality service at affordable prices. National authorities supervise that the competition fulfils these aims, and regulation is introduced as "safety net". Regulation is aimed at preventing unreasonable prices being charged by companies enjoying a strong or dominant position is a particular market area. This can take the form of licence conditions, compensation mechanisms, criminal penalties etc.

Liberalisation also supports environmental protection and security of supply. For instance, competitive pressure leads to a more rapid replacement of inefficient electricity generation by new and far less polluting plants. Increased market integration provides higher level of supply security, subject to the limits on physical interconnection capacity.

In the case of electricity, there are three key aspects that can be raised regarding security of supply: system security in terms of network infrastructure; supply security in terms of ensuring the existence of adequate generation capacity and the supply security in term of the primary energy source to generation (gas, coal, etc.). The liberalisation improves security in terms of ensuring generation capacity, which is ensured by the market and in terms of primary energy source to generation. The transmission system is the meeting point in the competitive market. But the market integration (for which liberalisation is needed) can decrease investments and operating costs. Development of electricity trade enables the power systems to meet hourly electric load and customers' annual requirements using a least-cost mix of generating sources. Therefore, on the one hand liberalisation contributes to meet the public service obligation to supply at affordable prices. However, with lower prices resulting from liberalisation, a number of complementary policies become increasingly important, in particular with respect to the increase of share of green energy, energy efficiency, security of supply etc.

In conclusion, the public service obligations imposed to "natural monopoly" (such as obligation to connect to the grid, the obligation to supply high quality service which are imposed to network operator) are not immediately linked to the process of market opening (liberalisation).

Competition contributes to meeting the public service obligation linked to the potentially competitive activities (the obligation to be supplied, at affordable prices and to receive high standards of customers service). Regulation is in this respect introduced as a safety net, and mainly takes form of minimum rules, standards of performance and compensation mechanism. The public service obligations impede liberalisation, while the regulation of monopolistic activities enables competition.

Liberalisation is necessary to enable competition. However, it is not sufficient since there are "naturally monopolistic" activities. Further, historical development led to creation of vertically integrated monopolies. Although they are being unbundled, some utilities still have dominant (or quite strong) position. In order to encourage new entrants, reduce possibilities for exercising market power and enable competition, rules are necessary. These rules are implemented through regulation mechanisms. So, in order to create competition, regulation is necessary not only in "monopolistic" part of the sector, but also in the potentially competitive, at least until the competitive markets are established.

Namely, market-based approaches complement the traditional network focuses of regulatory control, but they cannot on their own provide a complete substitute. None of market failures is solved through liberalisation and competition.

Further market liberalisation, appropriate regulation, improved use of existing networks and completion of missing links are complementary measures that will increase efficiency and competition, and ensure adequate level of quality, as well as reduced congestion and thus enhanced sustainability.

4. Winners and losers

The liberalisation process already brought some benefits for customers: the prices decrease, and there is

a choice. Further, liberalisation gave an opportunity to private investors to invest. Historically, investors in energy sector were national governments or state/public owned enterprises. Their main interest was to ensure energy resources, e.g. to provide public service indispensable for economic activity. The main goal of the private investors is to gain income or capital appreciation, i.e. to maximise profits. Therefore, the privatisation may, through change of ownership structure (transformation of public monopoly into private one) lead to greater abuse of market power. This is the main argument for regulating monopolies.

But, by selling assets to private investors, governments (first in Britain, and then across much of Europe) gained three advantages: they raised money to pay for other public expenditure (or to finance tax cuts), they created balance sheets for the privatised companies which could be geared up to pay for future investment; and, through regulation, they created vehicles for transferring wider policy objectives to utilities, and hence to customers' bill rather than though their tax returns. None of these three advantages was necessarily one which enhanced efficiency. That remained an empirical issue (Helm, 2001).

The liberalisation can therefore be regarded as beneficial for both consumers and state.

Still, the improved efficiency caused reduction in employment. The 1998 Employment in Europe Report (European Commission, 1998) showed electricity and gas industries to be among the sectors most affected by reduction in employment. Based on European and national statistics, it has been estimated that over 250,000 jobs have been lost in the sector between 1990 and 1998. Trade unions estimate that a further reduction in employment of 25% is likely over the next five years. The employment reduction affected mostly ageing technical male workforce with traditional expectation for a "job for life". On the other hand, since the industry has had traditionally low emphasis on marketing and customer services these are areas that offer job creation – still, certainly not for those affected with job reduction, since they are mostly rather old and reluctant to change.

5. The EU Enlargement

The Copenhagen European Council defined membership criteria that the candidates have to meet. Generally, in the process of integration towards the EU, it is necessary to develop functioning market economy and capacity to cope with competitive pressure and market forces within the Union. In addition, the candidates have to accept the entire *acquis,* including competition policy and the EU criteria for state aid allocation, as well as specific sectoral measures (i.e. secotral *acquis*). Since the EU energy market is being liberalised, the alignment process is quite complicated - candidates have to gradually liberalise market, while keeping it regulated in order to ensure public service.

The energy sector in the EU does not comply with the general economic membership criteria. Namely, the existence of functioning market economy is assessed on the basis of six elements out of which the EU energy sector does not fulfil at least two: prices and trade are not liberalised and significant barriers to market entry are still in place. The second economic membership criterion is the ability to cope with competitive pressures and with the action of market forces within the Union. Competition, defined as market condition existing when there is a large number of business all able to supply the same or similar products to a large number of purchaser, does not exist in most of energy sector. Application of the competition rules can obstruct of companies required to meet public service interest. Therefore, liberalisation of the energy sector of the EU is not complete, and provides safeguards (regulation) that restricts competition and includes public service obligations. Obligations of the public service should be

defined in a non-discriminatory, transparent and objective manner. Hence it should be clear up to what extent these obligations could justify restrictions to competition.

However, the issue of ability to cope with competitive pressures and with the action of market forces within the Union does not require that the pressure exists. The compliance with this criterion is evaluated on the grounds of several elements, among which the EU energy sector fails to meet four. These are existence of functioning market economy; the extent to which government policy and legislation influence competitiveness through trade policy, competition policy, state aids, etc.; the proportion of small and medium sized enterprises and a sufficient amount, at an appropriate cost, of human and physical capital, including infrastructure.

The issue of infrastructure was also raised at the Barcelona European Council (15-16 March 2002), as the EU presidency underlined that liberalising strategies must distinguish two clearly differentiated aspects: interconnection and effective liberalisation. So by the next spring European Council timetabled physical interconnection objectives have to be set. The agreed target for Member States of a level of electricity interconnection equivalent to at least 10% of their installed production capacity by 2005. Financial requirements should be met mainly by the enterprises involved.

Since the EU energy sector itself is not fully liberalised (yet) the EU does not require full liberalisation from the candidates during the accession negotiations. But in the energy sector the EU is faster "moving target" than in most of the other sectors. Namely, while the accession negotiations (which are provisionally closed with 10 candidates – all but Bulgaria and Romania) on energy were provisionally closed quite fast (e.g. Latvia and Lithuania opened energy chapter in the first half, and provisionally closed in the second half of 2001) the latest progress report Commission stipulates that the new member states will be expected to fulfil the obligations created by the EU *acquis* – including the new one. Any permanent derogation will not be accepted (European Commission, 2001).

The accession negotiations have focussed on the public obligations – namely nuclear safety and security of supply (the constitution of emergency oil stocks) and, to the lesser extent to liberalisation issues (adopting and implementing gas and electricity directives).

As regards the issue of nuclear energy, the European Union has repeatedly emphasised the importance of a high level of nuclear safety in candidate countries. The Report on Nuclear Safety in the Context of Enlargement (European Council, 2001) contains recommendations to all candidate countries to continue their national safety improvement programmes, including the safe management of spent fuel and radioactive waste, and regarding the safety of their research reactors.

All candidate countries have responded to these recommendations. During the first half of 2002, a special Peer Review on nuclear safety assessed the progress made by candidate countries in implementing all recommendations. According to the Status Report (European Council, 2002) all candidate countries are clearly committed to fulfil the recommendations.

Building up the necessary oil stock levels posses the problems for most of the candidates, since it requires a large amounts of investment funding. Therefore the candidates have required transitional periods: Estonia, Latvia and Lithuania until the end of 2009, Poland and Slovakia until the end of 2008, Cyprus has transitional period until the end of 2007, Malta until the end of 2006 and Czech Republic and Slovenia until the end of 2005.

The reform of the EU energy sector which is under way makes it more competitive. The forthcoming *acquis* enables application of "regular" economic membership criteria. Therefore, in the view of the EU enlargement the liberalisation of the energy markets in candidates becomes an issue. Some candidates have already identified sore points in the alignment process and required transition periods. Czech Republic was allowed the transitional period for implementation of gas directive until the end of 2004 and Estonia for and electricity directive until 2008. However, still the new *acquis* puts more pressure on the EU member states, it is likely that before signing the accession treaty the candidate will be required to adopt the EU liberalisation timetable. In the "final" negotiations the energy sector issues that are likely to be raised are those already tackled, but with some additional elements relevant for alignment with "regular" economic membership criteria. These issues relate to development of on an overall energy policy with clear timetables for restructuring the sector; preparedness for the internal energy market - the Gas and Electricity directives; improvement of energy networks in order to create a real European market.

Although the reform of the EU energy sector makes it more difficult for candidates to align, it also offers the new perspectives. Adoption and implementation of the new EU *acquis* in candidate countries simplifies privatisation and of existing utilities and offers the opportunity for private investors. So, the application *acquis* facilitates further improvement in meeting of membership criteria, especially those in which investment is needed. Private investments have an important role to play in this context and require a stable investment climate. In the transition economies additional privatisation argument is the belief that ownership would constrain the power of the state to intervene. Such state interventions namely might be incompatible either with economic efficiency, or more generally, with satisfactory operation of decentralised market economies.

Further, most transition economies privatise some of their utilities, particularly as they are amongst the most valuable commercial assets. In order to be willing to pay more fore these utilities, private investors have to confidence that their investments will be legally protected and that future tariffs will be regulated according to the clearly specified and acceptable criteria. Namely, tariff regulation influences return and risk depends on the period over which the investment is recouped. So the tariff regulation influences the confidence investor has in his ability to charge cost-reflective prices over the life of investment.

Therefore, in order to attract private capital, legal framework has to be defined in such a way that investment is sufficiently protected, and that foreign investors are not discriminated against. Becoming an EU member is quite a proof for that. But the accepting the EU *acquis*, is then the necessity.

6. Prospects for energy trade after the enlargement

The international and inter-regional energy trade is limited. The physical exchange is limited by capacity of interconnections. Other barriers to trade are imports restrictions (justified by public service concerns, such as environmental and safety standards, lack of open access to grids) and uncertain investment condition, underdeveloped organisational structures, lack of co-ordination and settlement rules. The EU enlargement will not *per* se improve the situation. However, the prospect of becoming the EU member gives incentives for faster reforms. Therefore the candidates are likely to implement the EU rules as required. This will alleviating the inter-regional trade barriers between the present and new member states. This should lead to trade creation and expansion. Since the trade with third countries is already very limited, excessive trade diversion is not likely. However, it is possible that trade patterns

that will develop do not reflect the optimal allocation of resources.

In the short to medium run development of trade will be limited by capacity. But the liberalisation of East-West energy trade is in the mutual interest of traders (e.g. Russia and the EU). Development and application of transparency and non-discrimination principles within the enlarged EU will incite investments. Energy trade in that sense can underpin the multilateral trading system and help ensuring common energy security interest and sustainable economic development.

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The paper focuses on the liberalisation of electricity sector. Some issues of the gas sector are also discussed, but in less details.

The consumers that meet these criteria become “eligible”, i.e. they have formally the right to choose supplier.

For these acts co-decision procedure is applied. The Economic and Social Committee issued its opinion in October 2001. The European Parliament in its first reading adopted a series of amendments on the proposal in March 2002. The Council also proposed changes to the Commission proposal. Barcelona European Council in March 2002 urged the parties concerned to adopt the proposed directive and regulation as soon as possible in the course of 2002.

UK and the Netherlands launched a study on energy liberalisation indicators in Europe. Preliminary report was published in 2000 (DG Tren, 2001). The Commission through Eurostat is establishing a series of indicators to monitor functioning of electricity market. Criteria I use here are based on the elements used in the Commission’s staff working paper “Completing the internal energy market” and the method the Commission uses for evaluation compliance of the candidates with the EU membership criteria, which are discussed later.

However, it does not mean that the gas market in these countries is not opened. Gas companies in France and Germany have voluntary published the main commercial conditions for providing access to their network

This assessment is quite limited. The other elements, such as contained in Oxera’s proposal (DG TREN,2000) should be taken into consideration in-depth analysis. These elements should include elements that are related to the different areas of supply chain, i.e. generation markets, wholesale markets, customer supply.

However, the price levels change not only because of liberalisation, but also the change in fuel costs and fuel mix can affect price development.

In the gas sector the main obstacles are the same as in electricity sector. The high network tariffs in electricity corresponds to the network access tariffs based on distance, and point to point capacity reservation and the high network tariffs in gas sectors. Balancing regime in electricity corresponds to balancing and storage regime in gas sector.

This approach is clearly reflected in the electricity Directive, which provides for a mechanism enabling member states to pursue public policy considerations, and was also considered during the accession negotiations.

In case of the EU enlargement, provided that electricity market integrates, the CEE dependence on Russian gas would decrease (Balmaceda, 2002.)

UCTE (Union for Coordination of the Transmission of Electricity) saves between 3-10% overall investment and operation costs thanks to regional interconnection.

For instance, the creation of trade raises issue of congestion resulting from unscheduled electricity flows. Such congestion can cause the network failure and decrease security of supply. This can be solved by sharing information (e.g. a day ahead information).

These are :

- Equilibrium between demand and supply is established by the free interplay of market forces; prices, as well as trade, are liberalised;
- Significant barriers to market entry (establishment of new firms) and exit (bankruptcies, liquidations) are absent;
- The legal system, including the regulation of property rights is in place; laws and contracts can be enforced;
- Macro-economic stability has been achieved including adequate price stability and sustainable public finances and external accounts;
- Broad consensus about the essentials of economic policy:
- The financial sector is sufficiently well developed to channel savings towards productive investment.

The EU common position is that the measures put into place for the achievement of public service objectives should not restrict trade and competition more than necessary.

Nuclear safety issue concerns improvement the safety of nuclear power plants in order to ensure that electricity is produced according to a high level of nuclear safety; and the high level of responsibility when handling the radioactive waste.

EU requires stock level sufficient for 90 day of consumption

From the economic point of view, the major limit for energy trade has been disguised picture of comparative advantage. Present energy prices in the FSU and CEE have been traditionally determined on the basis of average costs, and in the market economies on the basis of long-run marginal costs. (Russian energy prices, taxes, and costs, 1993., p. 70). The Energy Charter Treaty requires introducing the market-oriented pricing. It is one of the three main ECT principles (the other tow are the principle of state sovereignty and sovereign rights over natural resources and the principle of non-discrimination).

Prices of energy are not determined on the demand-supply basis. Price risk is often reduced (in project financing) by take-or pay contracts, where buyer agrees to pay a minimum price for goods or service whether or not they end up actually taking them.

This was also recognised as an issue in the framework of the European Energy Charter Treaty. The Trade amendment to the Energy Charter Treaty (ECT) of April 1998 specified conditions for applying most favoured nation treatment (MFN) and national treatment (NT) to the sale or other divestment of state assets (privatisation) and to the dismantling of monopolies (demonopolisation).

This is agreed in Understanding 10 in respect to treacle 10(4) of the original ECT

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